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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,201	01/11/2002	Kyo Ichikawa	YOS-0038	4767

7590 01/06/2004

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EXAMINER

VIJAYAKUMAR, KALLAMBELLA M

ART UNIT

PAPER NUMBER

1751

DATE MAILED: 01/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/042,201		Applicant(s) ICHIKAWA ET AL	
	Examiner Kallambella Vijayakumar		Art Unit 1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Application filed 01/11/2002.

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-16 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.

14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>1/2</u> .	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____
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Detailed Action

- This application is a continuation of PCT/JP00/04495 filed 07/06/2000. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) and claim under 35 U.S.C. 120, which papers have been placed of record in the file. Claims 1-16 are currently pending with the application.
- The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
- The information disclosure statement (IDS) submitted on 01/11/2002 and 04/03/2002 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

Claim Rejections - 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- Claims 1, 5, 7, and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Arima (US Patent 5,741,622).

Arima teaches an aqueous-alkali-developable-photo-solder-resist-composition comprising of polymer/monomer/copolymeric materials, solvent/diluents, photo-polymerization initiators, inorganic fillers and the dibasic acid anhydrides in the composition and varying their ratios in the composition and its benefits (Col-3, Line- 49 to Col-4, Line- 59). The molecular weight of the polymer components varied from 5,000 to 60,000 daltons and the acid values varied from 30 to 200 mg KOH/g that meet the limitations in instant claim-1. The photocurable compositions comprised of various polymers/copolymer components including acrylic acid, substituted styrenes, and glycidyl methacrylates/epoxy-methacrylates that would meet the instant claim limitations in Claim-1 (Col-5, Line-63 to Col-8, Line-53, Col-9, Lines: 20-38). Arima further teaches the addition of inorganic fillers

such as alumina, aluminum hydroxide and carbon black, and varying their content in the composition, forming the paste, coating films, the irradiating the coating with radiation and forming patterns (Abstract, Col-9, Lines: 7-16, 39-46, 65-68). When the reference teaches a product that appears to be the same as, or an obvious variant of, the product set forth in a product-by-process claim although produced by a different process, the claim is not patentable. See *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983) And *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). See also MPEP §2113. All the limitations of the instant claims are met.

The reference is anticipatory.

- Claims 1, 3, 5-6, 9-12 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori et al (JP 10-087769) in view of Tanigami et al (US Patent 5,470,506).

Mori et al teach composition and film of an alkali-developable-photo-curable-resin composition comprising of a resin obtained by reacting an epoxy with a compound having a double bond and a carboxyl group in a molecule and/ optionally with a saturated monocarboxylic acid, a polybasic acid anhydride, a diluents, a photo-polymerization initiator, inorganic pigment and glass powder. Mori et al teach the use of various components of polymers/monomers comprising of glycidyl (meta) acrylates, solvents, acid anhydrides, acids, inorganic fillers such as iron black/iron oxide with a particle size of less than 10 microns, and the low melting glass powder of 20 microns or less in particle diameter and varying the component ratios in the composition. Mori et al further teach coating the paste, prebaking the film, irradiating the negative mask, alkali washing followed by calcination of

patterns. The reported molecular weight of the polymer in the range of 80,000-120,000 and acid values in the range of 80-100 would meet the instant claim limitations (Abstract, Section: 0007, Section: 0007-0010, 0014-0016, 0018- 0020, 0023-0031).

Normally, only one reference should be used in making a rejection under 35 U.S.C. 102. However, a 35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to (SEE MPEP 2131.01):

- (A) Prove the primary reference contains an “enabled disclosure; ”
- (B) Explain the meaning of a term used in the primary reference; or
- (C) Show that a characteristic not disclosed in the reference is inherent.

The glass frit compositions in instant claim-4 would be inherently met by such glass compositions shown by Tanigami et al in a heat conductive paste (Col-9, Table-E, Col-14, Table-1). All the limitations of the instant claims are met.

The reference is anticipatory.

- Claims 1-16 rejected under 35 U.S.C. 103(a) as being unpatentable over either Arima (US Patent 5,741,622) or Mori et al (JP 10-087769) in view of Tanigami et al (US Patent 5,470,506) and further in view of Sugama et al (JP 07-248,619).

The disclosure by Arima on the composition of the alkali-developable-photocurable-resin is set forth as above. Arima do not teach or suggestive of the use of low-melting-glass-frits in the composition.

The disclosure by Mori et al (JP 10-087769) in view of Tanigami et al (US Patent 5,470,506) on the composition of the alkali-developable-photocurable-resin is set forth as above.

Arima or Mori et al in view of Tanigami et al do not teach the use of organic acid/mineral acid as the stabilizer/modifier in the photocurable photo-resist composition.

Sugama et al teach the benefits of incorporating organic and/or mineral acids stabilizers to an extent of 0.05-1 wt% of the photo-resist composition.

It would have been obvious for one with ordinary skill in the art to modify the composition of either Arima or Mori et al in view of Tanigami et al by varying the components and/or their ratios by choice of design to benefit from such modifications, because both the teachings are in the analogous art of alkali-developable-photocurable-resin compositions/photo-resists, wherein such variations and their benefits were taught individually, and further improve the composition of either Arima or Mori et al with the teachings of Sugama et al to benefit from such incorporation of organic/mineral acid stabilizers/modifiers in the photocurable resin composition, because all the teachings are in the analogous art of alkali-developable-photoresists, and with the expectation of reasonable success in arriving at the limitations of the instant claims by the applicants.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

- Claims 1-16 are rejected under the judicially created doctrine of double patenting over claims 1-2, 4, 16-20 of U. S. Patent No. 6,132,937 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: Although the conflicting claims are not identical, they are not patentably distinct from each other because the both the instant claims and claims of U.S. Patent 6,132,937 are drawn for the "photocurable and alkali developable compositions", made from the components whose compositions are similar, and mere use of one composition over another does not patentably distinguish the instant claims from each other.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

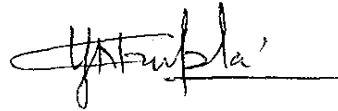
- Claims 1-8, 10-12 and 15 are rejected under the judicially created doctrine of double patenting over claims 1-12 of U. S. Patent No. 6,555,594 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: Although the conflicting claims are not identical, they are not patentably distinct from each other because the both the instant claims and claims of U.S. Patent 6,555,594 are drawn for the "photocurable and alkali developable compositions/ photocurable electrically conductive compositions", made from the components whose compositions are similar, and mere use of one composition over another and further claim of inherent properties does not patentably distinguish the instant claims from each other. The surface area limitations for the mixed oxides in the composition of Claim-1 of 6,555,594 would be inherent.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion

- Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 571-272-1324. The examiner can normally be reached on M-Th, 07.30 - 17.00 hrs, Alt. Fri: 07.30-16.00 hrs.
- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.
- Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



KMV
December 29, 2003

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